Notice of Allowability	Application No.	Applicant(s)	
	10/540,103	BEUKER ET AL.	
	Examiner	Art Unit	
	JAVID A. AMINI	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *1/8/2009*.

2. ☒ The allowed claim(s) is/are *1-9, 13-30*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *3/19/2009* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Javid A Amini
Primary Examiner
Art Unit: 2628

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Thomas H. Ham on March 19, 2009.

The application has been amended as follows:

Claims 10-12 are cancelled and amended claims 1, 26 and 28 as shown in the following listing of claims. This listing of claims will replace all prior versions, and listings, of claims in the application as Applicant representative discussed in the interview.

1. (currently amended) An apparatus for re-ordering video data for a display, comprising:

a) a first transpose means for receiving video data and performing a first transpose process on such video data to create partially re-ordered video data;

b) a means for storing the partially re-ordered video data; and

c) a second transpose means for reading the partially re-ordered video data and performing a second transpose process on such partially re-ordered video data to create fully re-ordered video data,

wherein the first and second transpose means are configured to perform the first and second transpose processes to convert the received video data to the fully re-ordered video data that is a transposed video data of the received video data, the fully re-ordered video data being compatible to a transposed scanning technique for driving the display, <u>wherein the first transpose means includes means for receiving RGB video data and writing at least one frame of the RGB video data to the storing means, and means for separating the RGB video data into separate R, G, and B separation video data and writing at least one frame of the separation</u>

video data, at least one frame of the G separation video data, and at least one frame of the B separation video data to the storing means, and wherein the second transpose means includes:

a means for addressing the RGB video data stored in the storing means;

a means for reading the RGB video data stored in the storing means to created fully re-ordered RGB video data;

a means for communicating the fully re-ordered RGB video data to downstream modules of a display processing system;

a means for addressing the R, G, and B separation video data stored in the storing means;

a means for reading the R, G, and B separation video data stored in the storing means;

a means for re-ordering the R, G, and B separation video data into fully re-ordered R, G, and B color bar video data having consecutive downwardly scrolling R, G, and B scan lines; and

a means for communicating the fully re-ordered R, G, and B color bar video data to the downstream modules of the display processing system.

2. (original) The apparatus as set forth in claim 1 wherein the first and second transpose means include: one or more programmable hardware blocks.

3. (original) The apparatus as set forth in claim 1 wherein: the first transpose means includes a first programmable processor and the second transpose means includes a second programmable processor, such that the apparatus is programmable for any of a plurality of display formats.

4. (original) The apparatus as set forth in claim 3 wherein the first and second processors are fabricated on a common substrate (S).

5. (original) The apparatus as set forth in claim 4 wherein the storing means includes computer memory which is fabricated on the common substrate.

6. (previously presented) The apparatus as set forth in claim 4 wherein the storing means includes a separate IC that is electrically connected with the first and second programmable processors.

7. (original) The apparatus as set forth in claim 3 wherein the first and second processors are programmable to re-order video data for two or more types of displays selected from the group consisting of a transpose scan CRT display, an LCOS device, a PDP, a monochrome DMD, and a color DMD.

8. (previously presented) The apparatus as set forth in claim 1, the storing means including: a means for storing at least two consecutive frames of the partially re-ordered video data.

9. (previously presented) The apparatus as set forth in claim 8 wherein the second transpose means includes a processor programmed to read the partially re-ordered video data associated with a first frame from the storing means while the first transpose means writes the partially re-ordered video data associated with a second frame to the storing means.

10. (canceled).

11. (canceled).

12. (canceled).

13. (previously presented) The apparatus as set forth in claim 1, the reading means including: a means for identifying an operational configuration for the receiving means based on a selected display.

14. (previously presented) The apparatus as set forth in claim 10, the receiving means including:

a means for generating a plurality of sub-fields associated with a frame of the received video data, wherein each sub-field includes sub-field video data associated with the received

video data; and a means for writing the sub-field video data for the plurality of sub-fields to the storing means.

15. (previously presented) The apparatus as set forth in claim 14, the generating means including: a means for temporarily storing a predetermined amount of sub-field data that is generated serially, wherein the writing means transfers the predetermined amount of sub-field data from the temporary storing means to the storing means in parallel.

16. (previously presented) The apparatus as set forth in claim 14, the storing means including: a means for storing the sub-field video data for the plurality of sub-fields.

17. (previously presented) The apparatus as set forth in claim 16, the reading means including: a means for addressing the sub-field video data for the plurality of sub-fields in the storing means; a means for reading the sub-field video data for the plurality of sub-fields in the storing means to create a fully re-ordered sub-field video data; and a means for communicating the fully re-ordered sub-field video data to downstream modules of a display processing system.

18. (original) The apparatus as set forth in claim 14 wherein the sub-fields are RGB sub-fields and the sub-field data is RGB sub-field data.

19. (previously presented) The apparatus as set forth in claim 14, the generating means including: a means for temporarily storing a predetermined amount of RGB sub-field data that is generated serially, wherein the writing means transfers the predetermined amount of RGB sub-field data from the temporary storing means to the storing means in parallel.

20. (previously presented) The apparatus as set forth in claim 18, the storing means including: a means for storing the RGB sub-field video data for the plurality of RGB sub-fields.

21. (previously presented) The apparatus as set forth in claim 20, the reading means including: a means for addressing the RGB sub-field video data for the plurality of

RGB sub-fields in the storing means; a means for reading the RGB sub-field video data for the plurality of RGB sub-fields in the storing means to create a fully re-ordered RGB sub-field video data; and a means for communicating the fully re-ordered RGB sub-field video data to downstream modules of a display processing system.

22. (previously presented) The apparatus as set forth in claim 10, the receiving means including: a means for generating a plurality of R separation sub-fields associated with a frame of the R separation video data, wherein each R separation sub-field includes R separation sub-field video data associated with the R separation video data; a means for generating a plurality of G separation sub-fields associated with a frame of the G separation video data, wherein each G separation sub-field includes G separation sub-field video data associated with the G separation video data; a means for generating a plurality of B separation sub-fields associated with a frame of the B separation video data, wherein each B separation sub-field includes B separation sub-field video data associated with the B separation video data; and a means for writing the R separation sub-field video data for the plurality of R separation sub-fields, the G separation sub-field video data for the plurality of G separation sub-fields, and the B separation sub-field video data for the plurality of B separation sub-fields to the storing means.

23. (previously presented) The apparatus as set forth in claim 22, the storing means including: a means for storing the R separation sub-field video data for the plurality of R separation sub-fields; a means for storing the G separation sub-field video data for the plurality of G separation sub-fields; and a means for storing the B separation sub-field video data for the plurality of B separation sub-fields.

24. (previously presented) The apparatus as set forth in claim 23, the reading means including: a means for addressing the R separation sub-field video data for the plurality of R separation sub-fields in the storing means; a means for reading the R separation sub-field video data for the plurality of R separation sub-fields in the storing means to create fully re-ordered R separation sub-field video data; a means for communicating the fully re-ordered R separation sub-field video data to downstream modules of a display processing system; a means for addressing the G separation sub-field video data for the plurality of G separation

sub-fields in the storing means; a means for reading the G separation sub-field video data for the plurality of G separation sub-fields in the storing means to create fully re-ordered G separation sub-field video data; a means for communicating the fully re-ordered G separation sub-field video data to downstream modules of a display processing system; a means for addressing the B separation sub-field video data for the plurality of B separation sub-fields in the storing means; a means for reading the B separation sub-field video data for the plurality of B separation sub-fields in the storing means to create fully re-ordered B separation sub-field video data; and a means for communicating the fully re-ordered B separation sub-field video data to downstream modules of a display processing system.

25. (previously presented) The apparatus as set forth in claim 10, the receiving means including: a means for identifying an operational configuration for the receiving means based on a selected display.

26. (currently amended) An integrated circuit for re-ordering video data to a selected display format, the integrated circuit comprising:

a substrate;

a first programmable processor fabricated on the substrate and connected with video input and programming terminals, the first programmable processor being configured to perform a first transpose process on the video data to create partially transposed video data ;

a second programmable processor fabricated on the substrate and connected with video output and programming terminals, the second programmable processor being configured to perform a second transpose process on the partially transposed video data to create fully transposed video of the video data; and

a memory electrically connected with the first and second processors to have data written into the memory from the first processor and read out of the memory by the second processor,

wherein the fully transposed video data is compatible to a transposed scanning technique for driving the display, <u>wherein first programmable processor includes means for receiving RGB video data and writing at least one frame of the RGB video data to the memory, and means for separating the RGB video data into separate R, G, and B separation video data and writing at least one frame of the separation video data, at least one frame of the</u>

G separation video data, and at least one frame of the B separation video data to the memory, and wherein the second programmable processor includes:

a means for addressing the RGB video data stored in the memory;

a means for reading the RGB video data stored in the memory to created fully re-ordered RGB video data;

a means for communicating the fully re-ordered RGB video data to downstream modules of a display processing system;

a means for addressing the R, G, and B separation video data stored in the memory;

a means for reading the R, G, and B separation video data stored in the memory;

a means for re-ordering the R, G, and B separation video data into fully re-ordered R, G, and B color bar video data having consecutive downwardly scrolling R, G, and B scan lines; and

a means for communicating the fully re-ordered R, G, and B color bar video data to the downstream modules of the display processing system.

27. (original) The integrated circuit as set forth in claim 26 wherein the memory is fabricated on the substrate.

28. (currently amended) A method of converting video data from a first format to a second format comprising:

programming a first processor with a first transform which transforms the first format video data to an intermediate format data for storage in a memory; and

programming a second processor with a second transform which transforms the intermediate format data from the memory into the second video format,

wherein the second format video data is a transposed video data of the first format video data, the second format video data being compatible to a transposed scanning technique for driving the display, and wherein the method further comprises:

receiving RGB video data;

writing at least one frame of the RGB video data to the memory;

separating the RGB video data into separate R, G, and B separation video data;

writing at least one frame of the separation video data, at least one frame of the G separation video data, and at least one frame of the B separation video data to the memory;

addressing the RGB video data stored in the memory;

reading the RGB video data stored in the memory to created fully re-ordered RGB video data;

communicating the fully re-ordered RGB video data to downstream modules of a display processing system;

addressing the R, G, and B separation video data stored in the memory;

reading the R, G, and B separation video data stored in the memory;

re-ordering the R, G, and B separation video data into fully re-ordered R, G, and B color bar video data having consecutive downwardly scrolling R, G, and B scan lines; and

communicating the fully re-ordered R, G, and B color bar video data to the downstream modules of the display processing system.

29. (previously presented) The method as set forth in claim 28 further including: supplying the first format video data to the first processor; transforming the supplied first format video data to the intermediate format data with the first processor; writing the intermediate format data to the memory; reading the intermediate format data from the memory with the second processor; and transforming the intermediate format data to the second format video data.

30. (original) The method as set forth in claim 28 further including: fabricating the first and second processors and the memory on a common substrate.

In regards to the analysis of claims 1-11, 13-30 in view of 35USC 101, the Office deems such claims as recited statutory subject matter as the current practices and procedures of the Office deem the method of claim 28 to at least be tied to another statutory class i.e. a first processor and a second processor see fig.2 #18 and 22, respectively.

Allowable Subject Matter

Claims 1-11, 13-30 are allowed. Claims 10-12 are cancelled.

The following is an examiner's statement of reasons for allowance:

The cited prior arts do not or suggest " wherein the first and second transpose means are configured to perform the first and second transpose processes to convert the received video data to the fully re-ordered video data that is a transposed video data of the received video data, the fully re-ordered video data being compatible to a transposed scanning technique for driving the display, wherein the first transpose means includes means for receiving RGB video data and writing at least one frame of the RGB video data to the storing means, and means for separating the RGB video data into separate R, G, and B separation video data and writing at least one frame of the separation video data, at least one frame of the G separation video data, and at least one frame of the B separation video data to the storing means, and wherein the second transpose means includes: a means for addressing the RGB video data stored in the storing means; a means for reading the RGB video data stored in the storing means to created fully re-ordered RGB video data; a means for communicating the fully re-ordered RGB video data to downstream modules of a display processing system; a means for addressing the R, G, and B separation video data stored in the storing means; a means for reading the R, G, and B separation video data stored in the storing means; a means for re-ordering the R, G, and B separation video data into fully re-ordered R, G, and B color bar video data having consecutive downwardly scrolling R, G, and B scan lines; and a means for communicating the fully re-ordered R, G, and B color bar video data to the downstream modules of the display processing

system" as recited in independent claim 1. Thus, the independent claim 1 is not obvious in view of these cited references.

The cited prior arts do not teach or suggest "wherein the fully transposed video data is compatible to a transposed scanning technique for driving the display, wherein first programmable processor includes means for receiving RGB video data and writing at least one frame of the RGB video data to the memory, and means for separating the RGB video data into separate R, G, and B separation video data and writing at least one frame of the separation video data, at least one frame of the G separation video data, and at least one frame of the B separation video data to the memory, and wherein the second programmable processor includes: a means for addressing the RGB video data stored in the memory; a means for reading the RGB video data stored in the memory to created fully re-ordered RGB video data; a means for communicating the fully re-ordered RGB video data to downstream modules of a display processing system; a means for addressing the R, G, and B separation video data stored in the memory; a means for reading the R, G, and B separation video data stored in the memory; a means for re-ordering the R, G, and B separation video data into fully re-ordered R, G, and B color bar video data having consecutive downwardly scrolling R, G, and B scan lines; and a means for communicating the fully re-ordered R, G, and B color bar video data to the downstream modules of the display processing system" as recited in independent claim 26. Thus, the independent claim 26 is not obvious in view of these cited references.

The cited prior arts do not teach or suggest "wherein the second format video data is a transposed video data of the first format video data, the second format video data being compatible to a transposed scanning technique for driving the display, and wherein the method

further comprises: receiving RGB video data; writing at least one frame of the RGB video data to the memory; separating the RGB video data into separate R, G, and B separation video data; writing at least one frame of the separation video data, at least one frame of the G separation video data, and at least one frame of the B separation video data to the memory; addressing the RGB video data stored in the memory; reading the RGB video data stored in the memory to created fully re-ordered RGB video data; communicating the fully re-ordered RGB video data to downstream modules of a display processing system; addressing the R, G, and B separation video data stored in the memory; reading the R, G, and B separation video data stored in the memory; re-ordering the R, G, and B separation video data into fully re-ordered R, G, and B color bar video data having consecutive downwardly scrolling R, G, and B scan lines; and communicating the fully re-ordered R, G, and B color bar video data to the downstream modules of the display processing system" as recited in independent claim 28. Thus, the independent claim 28 is not obvious in view of these cited references.

Dependent claims 2-9, 13-25, 27, and 29-30 are depended on one of the independent claims 1, 26, and 28. As such, these dependent claims include all the limitations of their respective base claims. Therefore, these dependent claims are allowable for at least the same reasons as their respective base claims.

The prior art Lyu with US 5801777 teaches a device for decoding digital video data in which a video decoding memory is controlled to appropriately match a format conversion in conducting the repetitive conversion part without performing the video decoding and format conversion independently, thereby reducing the amount of additional memory required.

The prior art Kato with US 7224890 involves that there is no mismatch of information caused in the relationship between a video stream after re-encoding and other data is generated and recorded on the recording side and reproduction on the reproducing side.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAVID A. AMINI whose telephone number is (571)272-7654. The examiner can normally be reached on 8-4pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on 571-272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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